No. 772,643. PATENTED OCT. 18, 1904.

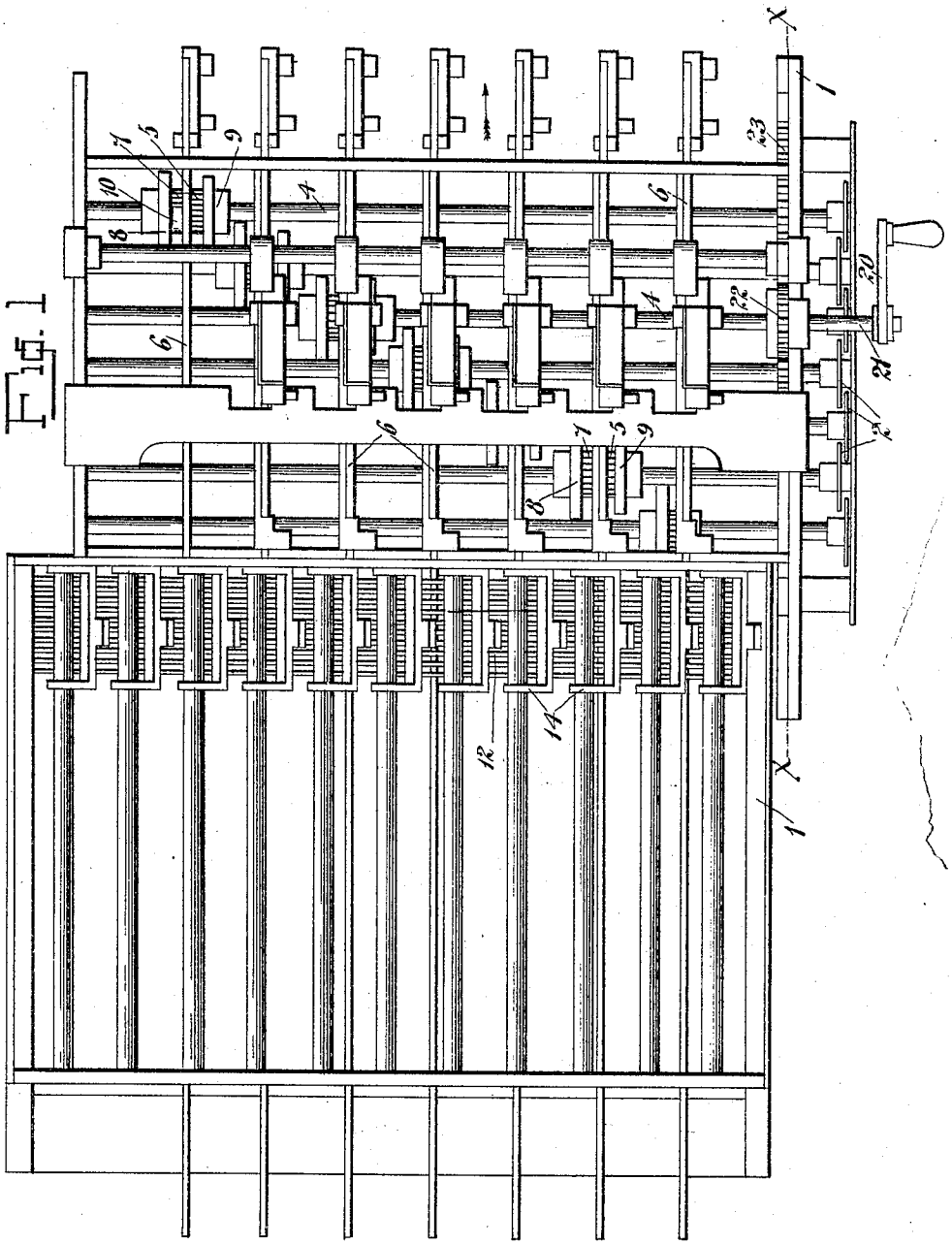
I. S. DEMENT.

REGISTER.

APPLICATION FILED JULY 28, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

FIG. 1



Witnesses
J. Greene
Wm. P. Simmons

Inventor
Isaac S. Dement
By his Attorneys
Knight Bros.

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NO MODEL. 3 SHEETS—SHEET 2.

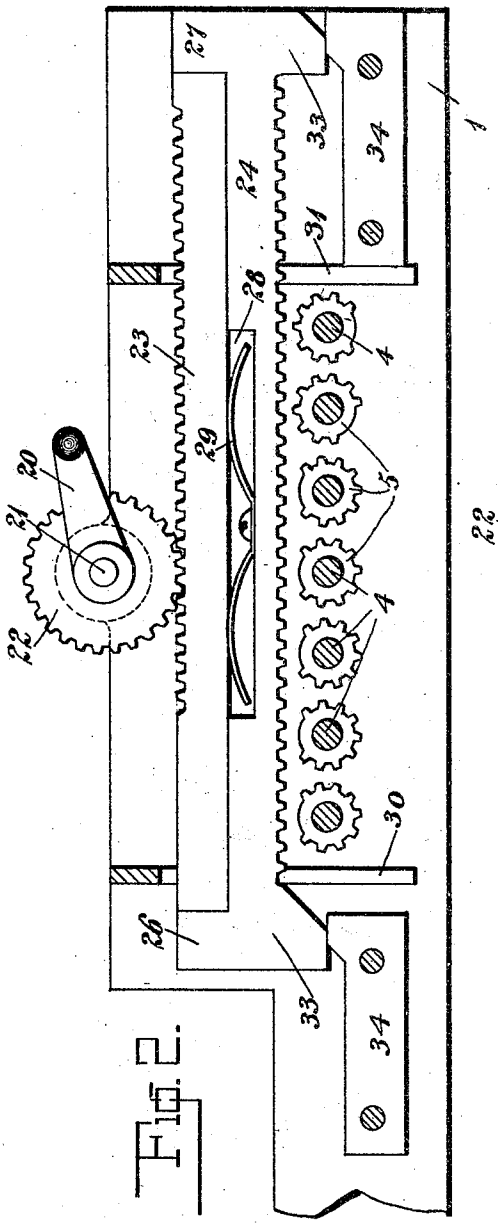


Fig. 2.

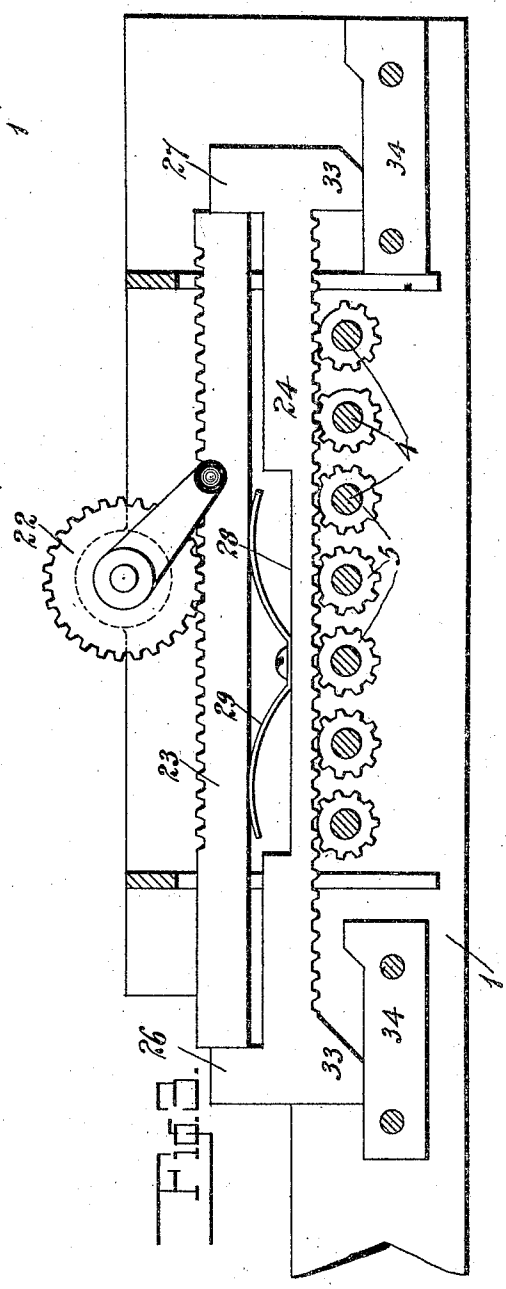


Fig. 3.

Witnesses

J. Green

Wm. P. Hammond.

Inventor

By his Attorneys Isaac S. Dement

Knight Bros

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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4

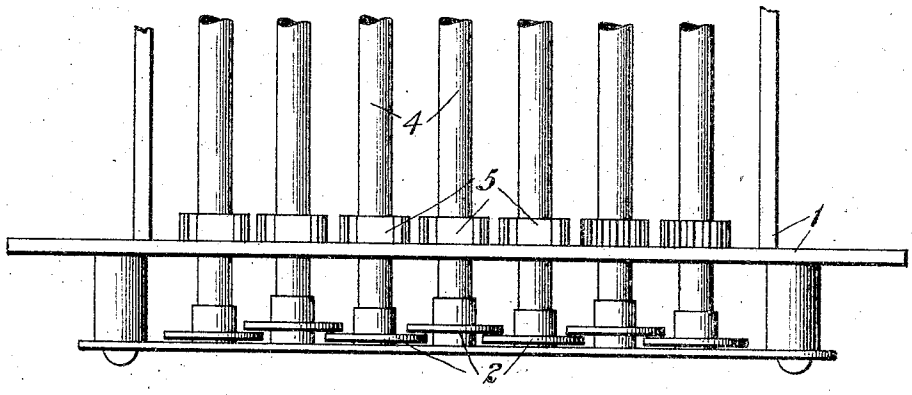


Fig. 5

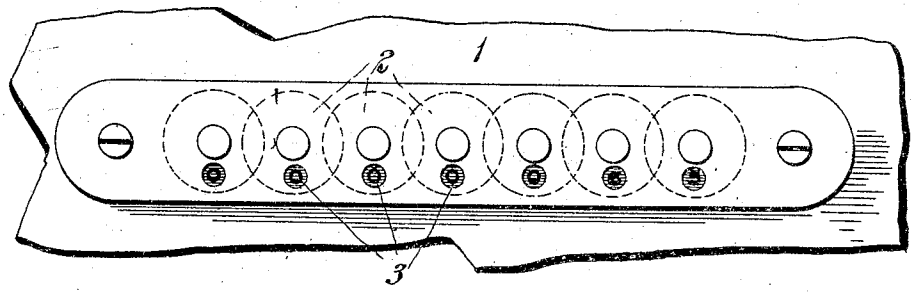
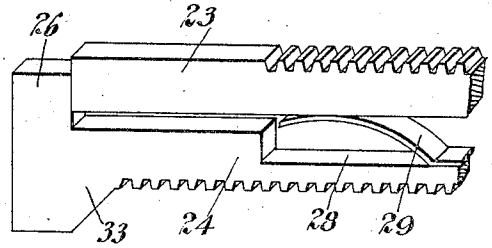


Fig. 6



Witnesses
J. Green
Geo. W. P. Flanmond

Inventor
Isaac S. Dement
By his Attorneys
Knight Bros.

No. 772,643. Patented October 18, 1904.

UNITED STATES PATENT OFFICE.

ISAAC S. DEMENT, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO AMERICAN MECHANICAL CASHIER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

REGISTER.

SPECIFICATION forming part of Letters Patent No. 772,643, dated October 18, 1904.

Application filed July 28, 1903. Serial No. 167,286. (No model.)

To all whom it may concern:

Be it known that I, ISAAC S. DEMENT, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Registers, of which the following is a specification.

This invention relates to registers; and its object is to provide means for resetting the register-shafts to zero after they have been in operation for a period of time or when so desired. The resetting of the register-shafts to zero must be accomplished without disturbing or interfering with the other operative parts of the register. This is effected by having the reset means normally out of engagement with the register-shafts, but readily and quickly brought into engagement with any or all of the register-shafts, so that they can be reset to zero in the manner hereinafter more fully described.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the register including only such parts as are necessary to show the operation. Fig. 2 is a vertical section on the line *x x*, Fig. 1, showing the resetting means in normal position. Fig. 3 is a similar view, but showing the parts in shifted position. Fig. 4 is a detail plan view of the register shafts and dials in zero position. Fig. 5 is a detail front elevation of the register-dials; and Fig. 6 is a detail perspective view of the rack-bars, showing how they engage each other.

A stationary frame for the movable parts of the machine is indicated at 1. On the dials 2 are arranged the numerals for the registration of purchases made in any desired system of coinage. The indicating-figure and figures showing the temporary total of purchases are shown through holes 3 in the face of the machine. These dials are mounted on shafts 4, (see Figs. 1 and 4,) which are driven by pinions 5. With these pinions the teeth on the under side of the rack-bars 6 engage. Each pinion 5 has attached to it a ratchet-wheel 7, and the two wheels revolve freely upon the shafts 4, between the collars 8 and 9. Collar 8 has a pawl 10 thereon which engages the ratchet 7. The result of this construction is that when the bar 6 is thrown outward—that is, in the direction of the arrow, Fig. 1—it turns the pinion 5 and the ratchet-wheel 7 will run freely under the pawl 10; but when the bar 6 is driven backward in a direction contrary to the arrow in Fig. 1 the pawl 10 engaging the ratchet-wheel 7, is rotated by the same, thereby rotating the register-shaft and dial 2. The means for operating and resetting the controller-bars 6 forms no part of the present invention. In the present drawings there are indicated merely the stop-slides 12, whose teeth are moved into the path of shoulders on bars 6 when the oscillating yokes 14 are oscillated by the keyboard-keys. (Not shown.) By referring to Fig. 1 it will be noticed that each stop-plate 12 is provided with a tooth 15, which is adapted to be engaged by one of the oscillating yokes 14. Thus when a yoke is oscillated by one of the keyboard-keys it will engage the stop-plate tooth 15 and move said stop-plate forward to operatively control a bar 6. The movement of any one of the stop-plates 12 is determined by a yoke 14, the yokes from right to left being controlled by the keyboard-keys from "0" to "9." The extent of projection of the bar 6 will determine the extent of its return motion, and therefore the extent of rotation of the register-shafts and dials 2.

This machine belongs to the class in which the operation of the key causes the setting of mechanism in such position that by the operation of a handle or lever the registering-wheels are turned to count and show the total of the transactions. The depression of a key, oscillating a yoke 14, carries, as already set forth, the projection of a corresponding bar 6. The rotation of the operating-handle (not shown) causes all the bars 6 which have been projected to be thrown in, counting the result on the dials 2. In this class of registers it is essential that means be provided for resetting the register-shafts and dials 2 to zero. To accomplish this quickly and accurately, there

is employed a handle 20, secured to a short shaft 21, journaled in the frame 1, said shaft carrying a gear-wheel 22, engaging a rack-bar 23, riding on and controlling a spring-actuated rack-bar 24, located immediately under the driven rack-bar 23, and the teeth of said rack-bar 24 adapted to engage a series of mutilated pinions 25, secured to the register-shafts 4. When the register-shafts are in such position that the dials thereon indicate zero, the mutilated pinions 25 will be in the position shown by the first five shafts counting from the left in Fig. 2—that is, the mutilated portion of the pinions will be directly under the rack-bar 24 and longitudinal movement of said bar will not affect the pinions; but presuming the register-shafts to have been rotated as shown by the two right-hand pinions, Fig. 2, the spring-actuated rack-bar 24 when forced downward into engagement with the pinions, Fig. 2, and given a longitudinal movement by the turning of the handle 20, gear 22, and rack-bar 23 the pinions that have been engaged by said rack-bar will be reset to zero—that is, rotated until the mutilated portions of each pinion is under the rack-bar. After the above operation the rack-bar is free to return to its initial position without engaging the pinions.

The under or pinion-engaging rack-bar 24 is controlled in its longitudinal movement by the rack-bar 23, which rests on the top of the rack-bar 24 and is held in position thereon by engaging the upturned ends 26 and 27 of the rack-bar 24. In a recess 28 in the rack-bar 24 is secured a spring 29, that exerts pressure against the two rack-bars and tends to force them apart when they are operated to reset the register-shafts. In the frame 1 are slots 30 and 31, adapted to receive and guide the rack-bars. The lower rack-bar 24 is provided at each end thereof with projecting cam-plates 33, adapted to engage with corresponding cam-plates 34, secured to the frame 1 of the machine. Normally these cam-plates are in the position shown in Fig. 2—that is, the cams 33 rest on the tops of cams 34, thereby freeing the rack-bar 24 from engagement with the pinions and permitting the register-shafts to be freely rotated. When the gear 22 is rotated by the handle 20, the rack-bar 23 will be moved longitudinally, carrying with it the rack-bar 24. When the rack-bar 24 has moved a sufficient distance to permit the cam 33 to ride down the inclined edges of the cam-plates 34, the said rack-bar 24 will be given a lateral thrust by the spring 29 and moved downward into engagement with the pinions 25, that have been previously operated by the register means—that is, rotated so that their teeth will be engaged by the teeth of the rack-bar. After the rack-bars have been forced apart and moved longitudinally to reset the register-shafts to zero, Fig. 3, the gear 22 is given a reverse rotation to move the rack-bar 23 back to its initial position, carrying with it the rack-bar 24. On the return movement of the rack-bars the cams 33 on the rack-bar 24 ride up the inclined surfaces of cam-plates 34 and lift the rack-bar 24 sufficiently far to permit the pinions to turn freely in the registering operation. The spring 29 will be compressed by reason of its engagement with rack-bar 23, when the rack-bar 24 is moved into the position shown in Fig. 2.

The operation of resetting the register shafts and dials to zero is accomplished by turning the handle 20, in turn rotating the gear 22, that meshes with the rack-bar 23, giving said rack-bar a longitudinal movement, carrying with it the rack-bar 24, until the inclined edges of the cams 33 and 34 are in position to permit the spring 29 to give the rack-bar 24 a lateral thrust that brings it into mesh with such of the mutilated pinions as have been previously operated by the register means. Continued longitudinal movement of the rack-bars will reset all the register-shafts to zero. When the pinions are reset to zero, the mutilated portions thereof are directly under rack-bar 24, so that a reverse rotation of the handle 20 will operate the rack-bar 23 to control and return the rack-bar 24 to its initial position without engaging the pinions.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of registering mechanism, a resetting device for resetting the registering mechanism at zero, composed of two members adjustable on each other, one member adapted to engage with or be separated from the registering mechanism and the other member adapted to engage with the driving mechanism, and means for adjusting the two members of the resetting device upon each other so as to cause one member to engage with or be separated from the registering mechanism.

2. The combination of registering mechanism, a resetting device for resetting the registering mechanism at zero, composed of two members adjustable on each other, one member adapted to engage with or be separated from the registering mechanism and the other member adapted to engage with the driving mechanism, and means for yieldingly moving one of the two members into engagement with the registering mechanism and positive means for moving it out of engagement with said registering mechanism.

3. The combination of registering mechanism, a resetting device for resetting the registering mechanism at zero, composed of two members adjustable on each other, one member adapted to engage with or be separated from the registering mechanism and the other member adapted to engage with the driving mechanism, and a spring located between the two members of the resetting device for yield-

ingly moving one of the two members into engagement with the registering mechanism, and positive means for throwing it out of engagement with said registering mechanism.

4. The combination of registering mechanism, a plurality of registering devices, a resetting device for resetting the registering devices at zero, composed of two members adjustable on each other, one member adapted to engage with or be separated from the registering devices, and the other member adapted to engage with the driving mechanism, and means for adjusting the two members of the resetting device upon each other so as to cause one member to engage with or be separated from the registering devices when said registering devices are at other than the zero position.

5. The combination of registering mechanism, a plurality of registering devices, a resetting device for resetting the registering devices at zero, composed of two members adjustable on each other, one member adapted to engage with or be separated from the registering devices, and the other member adapted to engage with the driving mechanism, means for yieldingly moving one of the two members into engagement with the registering devices when said registering devices are at other than zero position, and positive means for restoring said member to its normal position of disengagement from the registering devices after the registering devices have been reset at zero.

6. In a register, the combination of a plurality of register-shafts, means for operating the same, pinions on the register-shafts, rack-bars, one of said rack-bars capable of lateral movement, means for operating said rack-bars, the laterally-movable rack-bar normally out of engagement with the pinions, and means for laterally moving said rack-bar into and out of engagement with the pinions.

7. In a register, the combination of a plurality of register-shafts, means for operating the same, pinions secured thereon, a rack-bar, capable of lateral and longitudinal movement and operatively engaging the pinions, a rack-bar operatively connected with and controlling the movement of said rack-bar, and means for operating said bars, for the purpose explained.

8. In a register, the combination of a plurality of register-shafts, means for operating the same, mutilated pinions on the register-shafts, a longitudinally and laterally moving rack-bar, a rack-bar controlling the operation of said rack-bar, means for operating said controlling rack-bar, and means for operating the laterally-moving rack-bar to move it into and out of engagement with the pinions.

9. In a register, the combination of a plurality of register-shafts, means for operating the same, pinions on said shafts, a spring-actuated rack-bar adapted to engage said pinions, but normally out of engagement therewith, a driven rack-bar controlling said spring-actuated rack-bar, and cam means adapted to move the spring-actuated rack-bar out of engagement with the pinions.

10. In a register, the combination of a plurality of register-shafts, means for operating the same, mutilated pinions on said shafts, a spring-actuated rack-bar adapted to engage said pinions, a rack-bar operatively connected with and controlling said spring-actuated rack-bar, and cam-actuating means controlling the spring-actuated rack-bar to free it from engagement with the pinions.

11. In a register, the combination of a plurality of register-shafts, means for operating the same, a spring-actuated rack-bar, a rack-bar operatively connected with and controlling the spring-actuated rack-bar, pinions on the register-shafts adapted to be engaged by one of the rack-bars and said pinions constructed to permit the rack-bar to return to its initial position after the pinions have been reset to zero, without rotating said pinions.

ISAAC S. DEMENT.

Witnesses:
J. GREEN,
HARRY E. KNIGHT.